

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

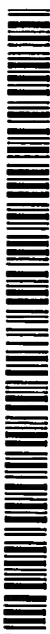


(43) International Publication Date
11 March 2004 (11.03.2004)

PCT

(10) International Publication Number
WO 2004/021089 A2

- (51) International Patent Classification⁷: **G03H 1/02**,
G11B 33/04, B44F 1/10, B41M 3/14, G09F 3/10
- (74) Agents: UNWIN, Stephen, Geoffrey et al.; Fry Heath & Spence LLP, The Gables, Massetts Road, Horley, Surrey RH6 7DQ (GB).
- (21) International Application Number:
PCT/GB2003/003800
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date:
2 September 2003 (02.09.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (30) Priority Data:
0220315.6 2 September 2002 (02.09.2002) GB
- (71) Applicant (*for all designated States except US*): DUBOIS LIMITED [GB/GB]; Amaray House, Arkwright Road, Corby, Northants NN17 5AE (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): FRASER, Anthony, Henry, Joseph [GB/GB]; The Priory, Ketton, Rutland PE9 3RD (GB). PIJANOWSKI, Stefan, Alexander [GB/GB]; 24 Clifton Drive, Oundle, Northants NN17 3AB (GB).
- Published:
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



WO 2004/021089 A2

(54) Title: SECURITY MARKING

(57) Abstract: A container for housing a CD or DVD, which has a plastics film about the exterior with a security marking formed or attached to the film.

SECURITY MARKING

This invention relates to a security marking applied to a product and to methods of forming the same.

It is known to apply an eye-catching pattern to products such as toothpaste tubes, bags of sweets and other such products. These patterns may be printed or reflective, holographic or other diffraction markings.

It is also known to apply a security marking in the form of a holographic or other diffractive image to a product, e.g. to a bank note, credit card, a CD or DVD or to a paper cover of a product. A need exists however for an alternative way of marking a product such as a CD or DVD or of increasing the security marking thereof.

According to a first aspect of the present invention, there is provided a container for housing a product such as a CD or DVD, the container having a plastics film about the exterior thereof with a security marking formed on or attached to said film.

Preferably, the security marking comprises a diffractive element, e.g. a hologram. The diffractive element may be in the form of facets of impressions formed in the plastics film. US5200253 describes a method of simultaneously forming a holographic pattern as an integral part of a plastic sheet as it is molded. The facets may reflect or diffract light incident thereon. The facets may be arranged in a random or ordered pattern, and may be used to provide a decorative feature as well as to provide a level of security.

The method of production of such facets depends on the characteristics of the film. They may, for example, be imprinted in the film using a master plate, e.g. made of a metal, such as nickel. The imprinting process may be a cold process or hot process depending on the physical characteristics of the film that is to be imprinted.

Preferably, the security marking comprises a repeating pattern, the repeat length of which is smaller than the dimension of the container about which it is applied.

The security marking may be formed on a strip a length of which is secured to the film.

Preferably, the film is cut from a continuous length or roll of film before or as it is applied to the container.

Preferably, the security marking is applied to the film before or as the film is applied to the container.

Preferably, the film is attached to the container only at opposite edges thereof, e.g. by a weld or strip of adhesive.

The security pattern may be formed on a carrier sheet, e.g. a thin plastics sheet, e.g. of polypropylene. And, preferably, the film is also formed of polypropylene.

In some cases, the security marking may comprise markings in a metallic layer on the carrier sheet.

Prior to application to the film, the metallic layer may be protected by a removable cover sheet.

Preferably, the carrier sheet is secured to the film by a cold melt adhesive or other cold bonding process.

Preferably, the metallic layer is sandwiched between the carrier sheet and the film.

Preferably, the film is already provided on such products, e.g. if the film is transparent it is used to hold a paper sleeve slid between the outer wall of

the container and the film (e.g. as in a conventional DVD or video cassette container).

Preferably, the security marking has a width in the range 5 – 20 mm and is applied around the container adjacent an edge thereof.

Other features of the invention will be apparent from the following description.

The invention will now be further described, merely by way of example, with reference to the accompanying drawings, in which:

Figure 1 shows elevations of a DVD container with a preferred embodiment of security strip applied thereto;

Figure 2 shows a plan view of another version of a security strip which may be used in place of that shown in Figure 1;

Figure 3 is a schematic diagram illustrating how such a security strip may be applied to a film for application to the container.

Figure 1 shows a conventional DVD container 1 comprising a lid portion 1A and a base portion 1B which are hingedly attached to each other. The container 1 has a plastics film (not shown), e.g. a transparent sheet of polypropylene, around the exterior thereof in the form of a jacket which is attached to the container only along edges 1C and 1D thereof so as to form a sleeve for receiving a paper insert e.g. bearing details of the film or other contents of the DVD housed within the container 1. Figure 1 also shows a security marking in the form of a holographic strip 2 applied around the bottom edge of the container 1, e.g. across the front cover 1A, around the spine and across the back cover 1B.

Figure 2 shows a plan view of another form of holographic security strip 3 which may be used in place of that shown in Figure 1.

Figure 3 is a schematic view illustrating the form and application of such a strip to such a container. The security strip 2 comprises a plastics carrier sheet 2A, a metallic layer 2B in which the security markings are formed and, optionally, a protective cover sheet 2C (shown detached).

Once the cover sheet 2C has been removed, the security strip 2 is applied to a plastic film 3 which is to form a jacket around the container 1 so that the metallic layer 2B is sandwiched between the carrier sheet 2A and the film 3.

Alternatively, as discussed above, it is possible to form impressions directly into the film, either as the film is molded or as impressions in an existing film.

The application of security markings as described above is relatively inexpensive, e.g. compared to the application of such markings as discrete labels onto a product, e.g. onto a credit card.

Claims

1. A container comprising a plastics film attached to the exterior thereof; the plastics film comprising a security marking formed on or attached thereto.
2. A container according to claim 1, wherein the security marking comprises a diffractive element.
3. A container according to claim 1 or 2, wherein the security marking comprises a repeating pattern.
4. A container according to claim 3, wherein the security marking comprises a repeating pattern, the repeat length of which is smaller than the dimension of the container about which it is applied.
5. A container according to any preceding claim, wherein the security marking is in the form of a strip.
6. A container according to claim 5 wherein the strip has a width in the range of 5 – 20mm.
7. A container according to any preceding claim wherein the strip is formed on a carrier sheet.
8. A container according to claim 7, wherein the carrier sheet is a plastics sheet.
9. A container according to claim 7, wherein the security markings comprises markings in a metallic layer on the carrier sheet.
10. A container according to claim 9, wherein the metallic layer is covered by a removable cover sheet.

11. A container according to claim 7, wherein the carrier sheet is secured to the film by a bonding process.
12. A container according to claim 11, wherein the bonding process is a cold melt adhesive process.
13. A container according to claim 9, wherein the metallic layer is sandwiched between the carrier sheet and the film.
14. A container according to any preceding claim, wherein the film is a transparent film.
15. A container according to claim 14, wherein the film is for holding a paper sleeve slid between an outer wall of the container and the film.
16. A container according to any preceding claim for housing a CD or DVD.
17. A method of applying a security marking to a container wherein the security marking is formed on or attached to a plastics film, the said film secured to the exterior of the container.
18. A method according to claim 17, wherein the security marking is formed on a strip, a length of which is secured to the film.
19. A method according to either claim 17 or 18, wherein the film is cut from a continuous length or roll of film before or as it is applied to the container.
20. A method according to any of claims 17, 18 or 19, wherein the security marking is applied to the film before or as the film is applied to the container.

21. A container substantially as hereinbefore described with reference to and/or as shown in one or more of the accompanying drawings.
22. A method of applying a security marking to a container substantially as hereinbefore described with reference to the accompanying drawings.

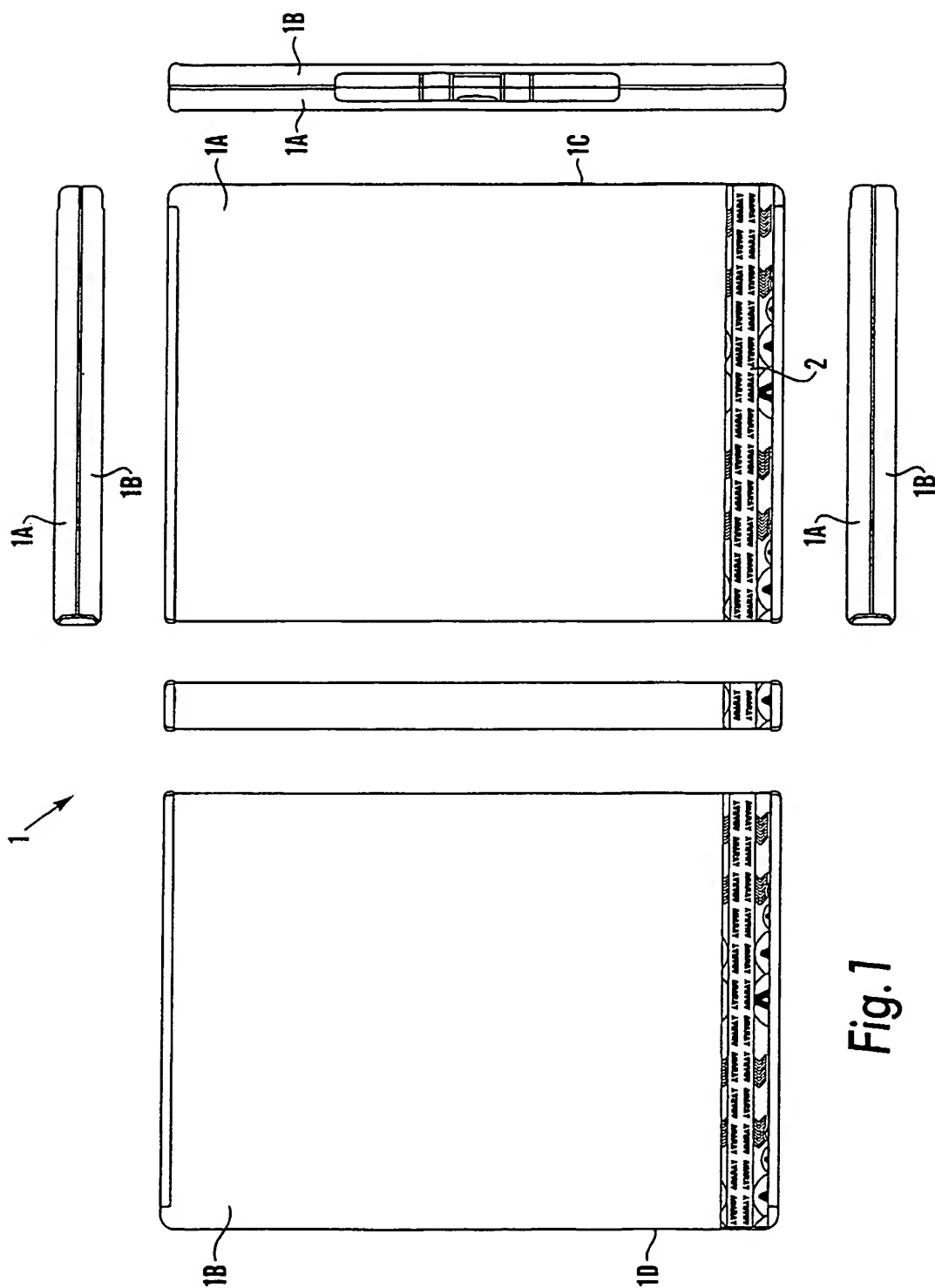


Fig. 1

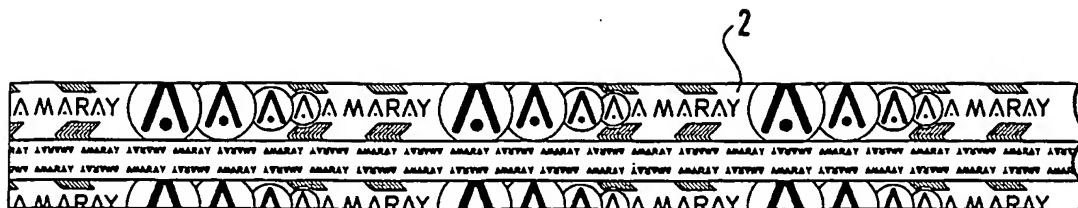


Fig. 2

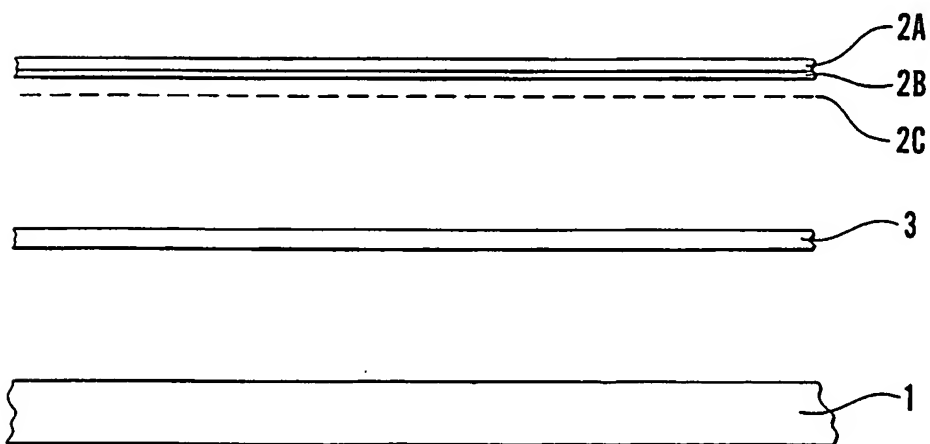


Fig. 3

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(21) International Application Number:
PCT/GB2003/003800

(22) International Filing Date:
2 September 2003 (02.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0220315.6 2 September 2002 (02.09.2002) GB

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(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

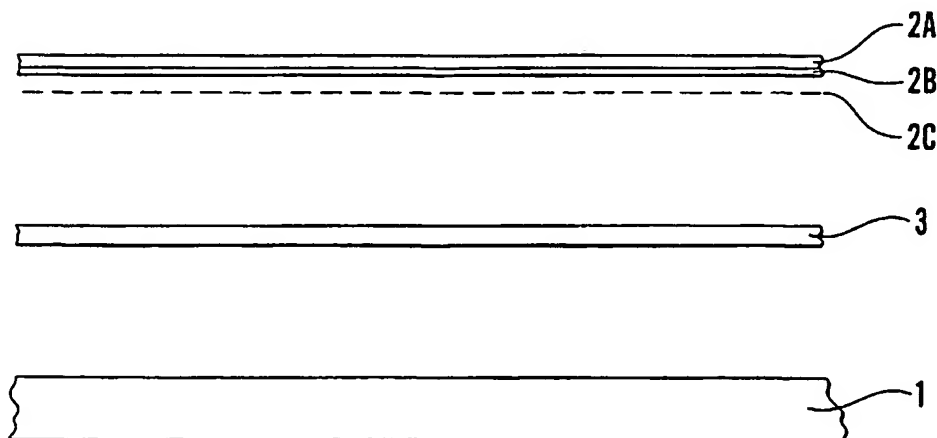
Published:

— with international search report

(88) Date of publication of the international search report:
29 April 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SECURITY MARKING PROCESS AND MATERIAL PROVIDED WITH SECURITY MARKING



(57) Abstract: A container (1) for housing a CD or DVD, which has a plastics film (3) about the exterior with a security marking (2) formed or attached to the film. Preferably, the security marking comprises a diffractive element, e.g. a hologram.

WO 2004/021089 A3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/03800

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G03H1/02 G11B33/04 B44F1/10 B41M3/14 G09F3/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G03H G11B B44F B41M B65D G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2001/000741 A1 (STONLEY CARL JOSEPH ET AL) 3 May 2001 (2001-05-03)	1,9,
Y	paragraphs '0006!', '0007!', '0014!', '0020!', '0023!'-'0027!', '0029!', '0033!', '0034!; figure 1	11-20 10
Y	US 4 856 857 A (DANJO KOUTARO ET AL) 15 August 1989 (1989-08-15) column 15, line 40-55; figures 6,7	10
Y	GB 2 211 760 A (ADVANCED HOLOGRAPHICS LTD) 12 July 1989 (1989-07-12) abstract; figure 1	10
A	US 6 181 446 B1 (COX JOHN E ET AL) 30 January 2001 (2001-01-30) column 1, line 5-28	1,15,16

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

26 January 2004

Date of mailing of the international search report

02/02/2004

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Publication No

PCT/GB 03/03800

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2001000741	A1	03-05-2001	US 6196383 B1	06-03-2001
			AT 209241 T	15-12-2001
			CA 2104704 A1	28-02-1994
			DE 9321646 U1	06-12-2001
			DE 69331179 D1	03-01-2002
			DE 69331179 T2	18-04-2002
			DK 585076 T3	21-05-2002
			EP 0585076 A2	02-03-1994
			ES 2168268 T3	16-06-2002
			JP 7056512 A	03-03-1995
			PT 585076 T	31-05-2002
US 4856857	A	15-08-1989	JP 7062784 B	05-07-1995
			JP 61254975 A	12-11-1986
			JP 2007213 C	11-01-1996
			JP 6079193 B	05-10-1994
			JP 61272772 A	03-12-1986
			JP 1988406 C	08-11-1995
			JP 6046340 B	15-06-1994
			JP 62131284 A	13-06-1987
			DE 3650027 D1	22-09-1994
			DE 3650027 T2	26-01-1995
			EP 0201323 A2	12-11-1986
			EP 0609683 A1	10-08-1994
GB 2211760	A	12-07-1989	NONE	
US 6181446	B1	30-01-2001	AU 3774299 A	23-11-1999
			EP 1080396 A1	07-03-2001
			WO 9957612 A1	11-11-1999
			US 2003076555 A1	24-04-2003
			US 6459513 B1	01-10-2002

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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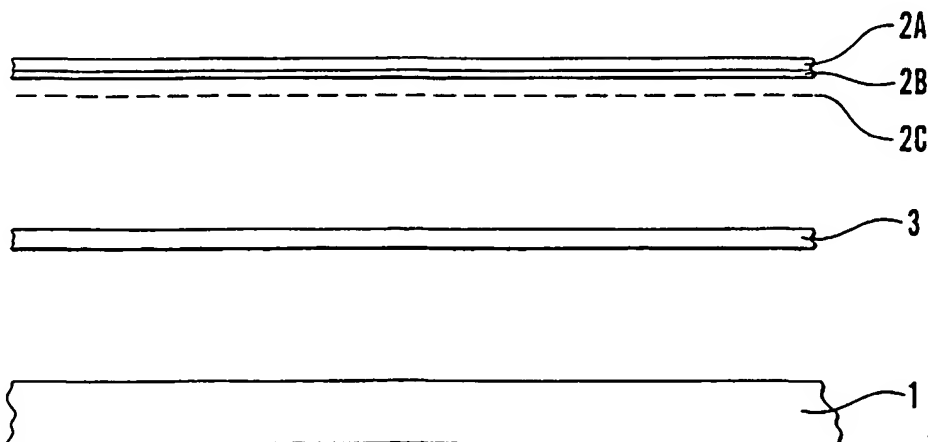
- with international search report
- with amended claims and statement

(88) Date of publication of the international search report:
29 April 2004

Date of publication of the amended claims and statement:
3 June 2004

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WO 2004/021089 A3

AMENDED CLAIMS

[received by the International Bureau on 2 April 2004 (02.04.04);
original claims 1 to 22 replaced by new claims 1 to 10 (2 pages)]

1. A container comprising a transparent plastics film attached to the exterior thereof for holding a paper sleeve slid between an outer wall of the container and the film; the plastics film comprising a security marking formed thereon.
2. A container according to claim 1, wherein the security marking comprises a diffractive element.
3. A container according to claim 1 or 2, wherein the security marking comprises a repeating pattern.
4. A container according to claim 3, wherein the security marking comprises a repeating pattern, the repeat length of which is smaller than the dimension of the container about which it is applied.
5. A container according to any preceding claim, wherein the security marking comprises facets of impressions formed in the plastics film.
6. A container according to claim 5, wherein the security marking comprises a metallic layer.
7. A container according to any preceding claim for housing a CD or DVD.
8. A method of applying a security marking to a container wherein the security marking is formed on a transparent plastics film, said film being secured to the exterior of the container for holding a paper sleeve slid between an outer wall of the container and the film.

9. A method according to either claim, wherein the film is cut from a continuous length or roll of film before or as it is applied to the container.
10. A method according to any claims, wherein the security marking is applied to the film before or as the film is applied to the container.

STATEMENT UNDER ARTICLE 19.1

The amended claims relate to an article having a transparent plastic film attached to the exterior thereof for receiving a paper sleeve, e.g. as in a CD or DVD container, with a security marking formed on the plastic sleeve itself, e.g. by means of impressions forming a diffractive element. None of the prior art discloses nor teaches towards such an arrangement.